

AUTOMATICALLY ALIGNING ROLLING BEARING

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Applicant: NTN TOYO BEARING CO LTD

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Abstract of JP9329139

PROBLEM TO BE SOLVED: To resist an automatically aligning rolling bearing against a long time use even under high fitting stress by the use of bearing steel, by cooling an inner circumferential surface later than a raceway surface when an inner ring is hardened so as to discriminate between cooling speeds, and making the vicinity of the raceway surface under a condition of compressive stress.

SOLUTION: In an automatically aligning bearing, an inner ring 10 having a plural row of raceway surfaces 12 on its peripheral surface, an outer ring 20 having a spherical raceway on its inner circumferential surface, a plural row of barreled rollers 30 freely rollingly built into among the raceway surfaces 12, 22 of the inner and outer rings 10, 20, and retainers 40 by which the row of rollers 30 is kept at predetermined intervals, are made to serve as main constituent elements. Hereat, discrimination is set between cooling speeds when the inner ring 10 formed of high carbon chrome steel is hardened, and an inner circumferential surface 14 is cooled later than the raceway surfaces 12. As a result, volume expansion generated by hardening is diminished on the side of the inner circumferential surface 14 in comparison with the sides of the raceway surfaces 12, and compressive stress remains on the raceway surfaces 12. At this time, difference in hardness among the inner circumferential surface and the raceway surfaces is preferably set to HRC 5 or more. Hereby, tensile strength by fitting can be loosened, and fault due to oil film starvation can be prevented.

